



From a photograph from life by Victor J. W. W.

THE KANGAROO. (MACROPUS MAJOR.)

Sydney, N. S. W. — Thomas Richards, Government Printer. — 1869.

Great Kangaroo.

(MACROPUS MAJOR. Female, with young.)

THE animal here represented is the female of the common or Great Kangaroo, which has been already described, and we take this opportunity to review the whole family, comprising the following natural groups or genera:—

- Great Kangaroos (*Macropus*); weight of animal up to 200 lbs.
- Wallabies or Brush-kangaroos (*Halmaturus*); weight from 10 to 50 lbs.
- Rock-wallabies or Rock-kangaroos (*Petrogalea*); weight up to 30 lbs.
- Tree-wallabies or Tree-kangaroos (*Dendrolagus*); weight up to 30 lbs.
- Silky-haired or Nail-tail Kangaroos (*Onychogalea*); weight from 8 to 10 lbs.
- Hare-kangaroos (*Lagorchestes*); weight from 6 to 8 lbs.
- Bettongs or Jerboa Kangaroos (*Bettongia*); weight from 4 to 5 lbs.
- Hypsiprymni or Rat-kangaroos (*Hypsiprymnus*); weight from 2 to 5 lbs.

THE GREAT KANGAROOS—(GENUS MACROPUS.)

First and second upper incisors rather feeble, third very broad, with two slight vertical folds.* Permanent premolar small, and soon lost; molars pushed gradually out, so that the normal number of molar teeth $\frac{4-4}{4-4}$ is never found perfect in aged animals. The teeth are always irregular, and are frequently retained longer in one ramus than in the other. When the last molar has come into position, the dentition may be considered complete, and would stand in this way:—incisors $\frac{6}{2}$, premolars $\frac{1-1}{1-1}$, molars $\frac{4-4}{4-4}$, = 28 teeth. The skull is rather broad between the orbits, rounded above the anterior portion of the zygoma, and the space between the grinders and the incisors rather longer than in the smaller Kangaroos. The arms are strong, but appear small from the elbow to the wrist, on account of their being covered with short adpressed hair. The tail is long, very powerful, and forms a strong support to the body.

It is difficult to say how far the common Kangaroo ranges northward,—probably not much beyond the tropics. The West Australian Kangaroo is a distinct species.

WESTERN KANGAROO (*Macropus ocydromus*).

This animal, which at first sight appears identical with the common Kangaroo, is of a smaller size; its limbs are finer, and the fur shorter but more woolly. The colour is slightly darker, and the legs white, or nearly so. It is peculiar to West Australia.

SOOTY KANGAROO (*Macropus fuliginosus*).

Little is known of this species, which was first discovered by French voyagers on Kangaroo Island, where it is not now to be found. The fur is longer, more yellowish, and has a more woolly texture than the fur of the Great Kangaroo.

RED KANGAROO (*Macropus rufus*).†

The male is rich orange-red, with the legs and abdomen of a light yellowish-white; throat and chest delicate pink. This colour is very deep during the rutting season, and appears to be a sort of pigment excreted from the body. We have often examined old males a short time after death, and have also kept others in an enclosure, and in every one of these animals the colouring matter of the neck and breast marked the fingers when these parts were touched. When some of the tame animals were driven about and had exerted themselves violently, the colouring became more apparent, and a peculiar odour, not unpleasant however, was also noticed.

The teeth are slightly different from those of *Macropus major*; the stronger premolar is not pushed out; but having examined only a few skulls of adults we cannot say whether these characteristics are constant.

The Red Kangaroo inhabits the interior of New South Wales, Queensland, and South Australia. The female is bluish-grey; legs and abdomen white. Weight of male about 200 lbs.

* These folds or grooves become obliterated with age.

† Those authors who are fond of making genera without giving proper reasons for so doing, arrange the Red Kangaroo with the genus *Osphranter*,—we believe on the strength of its “hairy nose.” If a division is desirable, let those animals be comprised under the genus *Osphranter* of which the sexes differ in colour.

RED WALLAROO (*Macropus antilopinus*).

Male.—Fur short, the hairs stiff, and closely applied to the body; limbs and abdomen pale rusty-yellow; toes black; height, about 4 feet. Female.—Considerably smaller; fur longer, less harsh, and less closely applied to the body than in the male. General tint brown, under-parts and limbs rusty white; fore-feet brown, with black hairs near the claws.

Mr. Waterhouse states that the skull of *Macropus antilopinus* is about equal in size to that of *M. major*, but shorter in proportion to its width; and the most striking difference is in the form of the muzzle, which, instead of becoming gradually narrower towards the apex, is quite as broad near the end as at the base, and is broadest rather in front of the middle; the nasal bones are shorter than in *M. major*. The frontal bones are deeply concave above between the orbits, and are much contracted immediately behind them; the temporal ridges meet to form a well-marked sagittal crest. The foremost incisor is but little broader than the second; the third is about double the width of the second, has a strong oblique external groove, rather in front of the middle of the tooth, and there is a second groove in front of this; but this latter, which represents the foremost of the two grooves observed in *Macropus major*, is much less distinct than in that animal. In an adult, or rather aged individual, Mr. Waterhouse observed only 13 molar teeth in both jaws,—a proof that this animal has been correctly arranged with the Kangaroos proper, in which the teeth are variable, and are pushed from behind forward and out.

The habitat of this species is given as Port Essington, where it was discovered by the late Mr. Gilbert. Weight of male from 150 to 200 lbs.

BLACK WALLAROO (*Macropus robustus*).

Male.—Fore and hind legs rather short, but powerful. General colour deep slaty-grey; legs and toes black.

Female.—Much smaller than the male. General colour silvery-grey; beneath and legs whitish; toes brownish-black. Weight of male, 150 lbs.

Habitat.—The mountain ranges of the Coast of New South Wales.

Animals from 10 to 50 lbs. weight.

BRUSH-KANGAROOS—(GENUS HALMATURUS.)

Kangaroos of moderate size, with slender, sometimes very short arms, and rather elongate tail. Skull comparatively shorter than that of the Great Kangaroos. The teeth the same as in *Macropus*. The principal distinguishing characteristics are the third upper incisor and the permanent large premolar. The third incisor is more elongate, with rather a narrow crown and a deep groove; the corresponding tooth of a *Macropus* has a broad crown, and the groove is often obliterated by the time the adult state is reached; in young animals it is always better developed. The premolar is permanent, and seldom lost except perhaps in extreme old age. The molar series wears down instead of being pushed forward, so that the dental formula is constant. Incisors $\frac{6}{2}$; canines $\frac{0-0}{0-0}$; premolars $\frac{1-1}{1-1}$; molars $\frac{4-4}{4-4}$, = 28. All Wallabies or smaller Kangaroos (with very few exceptions) have a bridle-mark behind the shoulder and a horizontal stripe across the haunch. There is not much difference in colour and size between male and female, and their habits are more or less nocturnal. The largest species live in Tasmania; the smallest are found in New South Wales and in West Australia.

PARRY'S WALLABY (*Halmaturus parryi*).

This is one of the fleetest and most slender-footed of the whole tribe; its tail is very thin and long, the arms are rather powerful, and the general colour is silvery-grey above and white beneath; there is the usual black mark from the eye to the muzzle, bridle and haunch marks are indistinct; the toes are black.

The habitat of this species is New South Wales and Queensland; it first occurs in the Clarence River District, and is common at Wide Bay and on the Burnett and Dawson.



Harriet Scott, del. et lith.

THE BLACK-STRIPED WALLABY.
(*HALMATURUS DORSALIS*.)

From a photograph from life by Victor J. Proust

THE COMMON WALLABY.
(*HALMATURUS UALABATUS*.)

BLACK WALLABY (*Halmaturus ualabatus*).

Fur of moderate length, rather harsh and glossy; general colour deep brown, suffused with reddish on the hinder parts of the body; feet and tail very dark, almost black. Abdomen and breast rusty yellowish. The Black Wallaby, or Black-tailed Wallaby as Mr. Waterhouse designates this species, inhabits the eastern parts of New South Wales, principally the Coast Range, extending northward as far as the Clarence and Richmond, perhaps farther. An allied species to which the name of *Halmaturus Mastersii* has been given, occurs in some of the Queensland Districts at the Burnett and other rivers. This variety is lighter in colour, but sufficient specimens have not yet come to hand which would prove that the light colouration is constant.* In the neighbourhood of Sydney no other but the Black Wallaby is found. The structure of the skull resembles *H. ruficollis*; the third or inner upper incisor is very large, with a deep groove and rounded outer margin; the premolars are thick and very permanent; that is, not easily lost or worn down. The tail is long, not much incrassated at the base, and less stiff than other Wallabies have them; in fact, the form approaches the pliable tail of the Rock Wallaby (*Petrogalea*).

BLACK-STRIPED WALLABY (*Halmaturus dorsalis*).

Fur rather short, general colour grey with a wash of brown; neck and shoulders rust colour, beneath white; toes black; a black stripe from the neck to near the tail. The skull is rather elongate, and resembles *H. ruficollis*. The teeth are very irregular, and of eight or ten adult specimens examined not two are alike, so that it would be vain to attempt a description. The animal is smaller than *H. ruficollis*, and inhabits the districts of Southern Queensland; it is also found in the north-eastern parts of New South Wales.

RED-NECKED WALLABY (*Halmaturus ruficollis*).

Fur of moderate length; general colour rusty-grey, under parts grey-white, slightly suffused with pale rust colour; ears whitish internally, tipped with black; tail rather long, greyish, with black apex; toes black.

It is stated that this Wallaby was first discovered by the French naturalists in King's Island, Bass's Straits, and that it was found even in the neighbourhood of Sydney. The first statement we doubt very much, and why it should not be found near Sydney now is inexplicable. The Black Wallaby is as plentiful as ever, and this is the only species which old residents remember to have hunted since they were boys. The fact is, all these supposed species vary so much in colour that it is really out of the question to give a description which will answer to every variety. We will just examine the red-necked Wallaby, and record a few facts.

Mr. Gould gives some good figures of the animal, which answer to a variety from the Clarence River. The "Bong Bong" variety, lately discovered by Mr. Masters, is of a more grey colour, no rust-marks are visible on the neck. A white stripe on the haunch is present in one specimen, but this is wanting in the others. The face-markings differ also in the four specimens in our collection. Only one young has the white stripe under the eye as distinct as Mr. Gould figures it; an old male has the whole face blackish, with just a shade to indicate the white mark seen in the young. A full-grown female shows a similar shaded stripe and a small light patch on the corner of the mouth, so that it is extremely difficult to give more than a general description without creating confusion. Both Mr. Waterhouse and Mr. Gould consider *Halmaturus bennettii* of Tasmania to be only a variety of the present species. In outward appearance both animals differ much, *H. bennettii* being almost uniform dark-mottled grey, with shorter legs and tail; but having compared a series of skulls of both, we come to the conclusion that there is no specific difference, as far as head and teeth are concerned. The fact is, all these Wallabies interbreed, in captivity at least.

BLACK-GLOVED WALLABY (*Halmaturus manicatus*).

General colour grey, distinctly pencilled with black and white, under parts pale grey, slightly suffused with yellowish. Legs and feet yellow, except the fore-part of the latter, which is black, the two colours being sharply defined. Arms short and slender, ears tipped with black, tail long, compressed, not very thick, with a crest of black hair on the upper and under surface of the apical half. The bridle-mark is indistinct or absent, but there is a series of black stripes across the back and haunches resembling the markings of the Banded Hare-kangaroo. As no author has mentioned these marks before, we wish to draw attention to them.

* Mr. Masters has lately collected a fine series of these Wallabies on the Burnett River, in Queensland; and though skull and teeth differ little, except in the smaller third upper incisor, from those of the Black Wallaby, the reduced size of the fore-limbs proves it a distinct species. The colour is iron-grey, with rusty hairs interspersed, a rusty-coloured belly, and a black short bridle-mark behind the shoulder.

The skull resembles the skull of a Hare-kangaroo (*Lagorchestes*); it narrows suddenly in front of the zygoma, is deep vertically, furnished with a slender canine, and has the first upper incisor large and strong, exactly as the *Lagorchestes leporoides*. West Australia is the habitat of this Wallaby.

AGILE KANGAROO (*Halmaturus agilis*).

A Queensland species, of a sandy colour.

This concludes the list of the larger Brush Kangaroos or Wallabies up to 50 lbs. weight. The following species are much smaller.

BRUSH KANGAROOS—(GENUS HALMATURUS)—up to 30 lbs. weight.

- H. Greyi. South Australia.
- „ Derbianus. South Australia.
- „ Hautmanni. Hautmann's Abrolhos, West Australia.

PADEMELONS, OR SMALL KANGAROOS—(GENUS HALMATURUS)—from 10 to 15 lbs. weight.

- H. parma. East coast of New South Wales.
- „ dama. West Australia.
- „ thetides. Coast districts of New South Wales.
- „ billardieri. South coast districts and Tasmania.
- „ stigmaticus. North-east coast.
- „ brachyurus. West Australia.
- „ wilcoxi. Clarence District and Southern Queensland.

These animals inhabit the mountain districts near the coast, and are seldom if ever found on the plains of the interior.

ROCK-WALLABIES, OR ROCK-KANGAROOS—(GENUS PETROGALEA)—with long pliable tail not incrassated at the base, inhabiting mountain districts on the southern, eastern, and western coast line. (Weight of animal up to 30 lbs.)

- Petrogalea penicillata. Eastern parts of New South Wales.
- „ inornata. Eastern parts of New South Wales.
- „ xanthopus. South Australia.
- „ brachyotis. West and north-west coast.
- „ lateralis. West and north-west coast.
- „ concinna. West and north-west coast.

STRONG-ARMED KANGAROOS, OR TREE-KANGAROOS—(GENUS DENDROLAGUS.)

- D. ursinus. New Guinea.
- „ inustus. New Guinea.

These animals ascend trees, and are distinguished by their powerful fore-limbs and long pliable tail, which resembles that of the Rock-wallabies. A third species (*Dorcopsis bruni*) also inhabits New Guinea, but is terrestrial, though the fore-legs are more strongly developed than is usual in Kangaroos. The weight of these animals we should judge to be about 30 lbs. The *D. bruni* was the first Kangaroo ever discovered—many years before Cook's voyages.

SILKY-HAIRED, OR NAIL-TAIL KANGAROOS—(GENUS ONYCHOGALEA.)

- O. unguifer. North-eastern parts of Australia.
- „ frænata. Plains of the interior of New South Wales and Victoria.
- „ lunata. Plains of the interior of South and West Australia.

This group comprises the small silky-haired Wallabies or Kangaroos of the interior; they weigh seldom more than 8 or 10 lbs., and are about the size of a common hare. Their light-grey fur is of a peculiar softness, and the tail has a bare nail-like tip. This genus and the following genera possess more or less developed canine teeth.

HARE KANGAROOS—(GENUS LAGORCHESTES.)

- L. fasciatus. West Australia.
- „ hirsutus. West Australia.
- „ conspicillatus. West Australia.
- „ leporoides. Plains of New South Wales, South Australia, and Victoria.
- „ leichhardti. North-east coast and Victoria.

The Hare-kangaroos, so called from their resemblance to that well-known rodent, are the fleetest of the whole tribe; and though they do not exceed a common hare in bulk, they can make clear jumps of eight and ten feet high. Their arms are exceedingly short, and when progressing cannot be noticed, because they are pressed close to the body, and covered by the long fur; the hind legs are very long and slender, and the tail rather short and stiff, and not incrassated at the base; the canines are well developed.

BETTONGS, OR JERBOA KANGAROOS—(GENUS BETTONGIA.)

B. cuniculus. Tasmania.

„ *greyi.* New South Wales, South and West Australia.

„ *campestris.* South Australia.

These three species of Bettongs resemble each other very much, and are probably nothing but varieties. The western and southern animal, that is *B. greyi* and *B. campestris*, form extensive burrows, which the Tasmanian species does not; the tail is more or less prehensile, and the weight ranges from 5 to 6 lbs.

B. penicillata. Interior of New South Wales.

„ *ogilbyi.* West Australia.

These two animals also resemble each other; they are very small, probably not more than 3 or 4 lbs. in weight; the tail is prehensile, and they climb well. We have seen one get over a close palisade-fence 8 feet high. This group connects the Kangaroo-tribe with the Phalangiers.

RAT-KANGAROOS—(GENUS HYPSPRYMNUS.)

H. murinus. New South Wales.

„ *apicalis.* Tasmania.

„ *gilberti.* West Australia.

„ *platyops.* West Australia.

The true Rat-kangaroos approach the Bandicoot tribe, and some naturalists have classed them as Bandicoots when the skull could not be examined; their limbs are of more equal length; they progress rather slowly, and the tail is short and stiff. The head of the Rat-kangaroo is elongate, that of *H. platyops* excepted; and the canine teeth are strongly developed.

BANDICOOT TRIBE—(PERAMELIDÆ.)

(Without illustration.)

Having closed the Kangaroo family with the Kangaroo Rats proper of the genus *Hypsiprymnus*, we cannot but notice in the Bandicoots a general resemblance to the Rat-kangaroos. The Bandicoot family differs, however, much from all the preceding ones in the larger number of teeth. The usual formula, from which the Wombat only deviated, of six cutting teeth or incisors above and two below, has disappeared in the present section, and we find the incisors increased to ten above and six below. The fore-feet have the outer toes rudimentary, with only three nails, and the hind feet (though they retain the Kangaroo characteristic, and still possess the two inner toes joined by an integument) begin to produce a yet very rudimentary fifth toe or thumb. The pouch of the female, owing to its peculiar mode of progression, reassumes the reverse position to that of the Kangaroo and Phalanger tribe, and again resembles the pouch of the Wombat with its opening upwards. The number of mammae is changed, however; we now find eight instead of four, though the young never exceed four. The tail of the Bandicoots proper is short, and the fur harsh to the touch; their food comprises bulbous roots, grass, and insects; they are excellent as destroyers of vermin, and we have noticed fifty and more mice killed by one of them in a very short time.

The family comprises three genera:—

GENUS PERAGALEA.

Head very elongate, canine teeth, powerfully developed grinders conical and almost rootless, with nothing but a few tubercles at the lower part of these teeth; tail large, compressed, with a crest of hair on the upper edge, ending in a considerable tuft.

RABBIT-EARED PERAGALEA OR RABBIT-RAT (*Peragalea lagotis*).

This animal, which is about the size of a rabbit, has also very long ears, and beautiful silky ashy-grey fur; the skull is much contracted between the orbits, and furnished with curved canine teeth of great strength. The animal

feeds on bulbous roots principally, and is not so ferocious as these tusks would indicate. The upper end of the tail is black, the remaining half covered with long white hair; the under part of the body is whitish. This is the only member of the family which burrows in the ground.

Habitat—New South Wales, Northern Victoria, South Australia, Queensland, and West Australia.

GENUS CHAEROPUS.

Head very broad, skull much contracted between the orbits, as in the preceding genus; teeth small, canines much reduced, with triangular base, and in form resembling a premolar; fore-limbs slender, with two functional toes, and a third one situated very much higher up, which is very rudimentary, and often overlooked; young animals have this third toe well developed; ears and tail long, like those of the *Peragalea*; tail compressed, and with a crest of hair running from the base along the upper ridge, and ending in a tuft.

PIG-FOOTED BANDICOOT (*Chaeropus castanotis*).

Fur long, loose, and rabbit-grey, beneath whitish; ears long, covered with small rusty hairs; tail covered with short hair, and with longer on the upper edge; eyes very large. The first specimen of this curious animal was discovered by the late Sir T. A. Mitchell, Surveyor General, near the junction of the Murrumbidgee River, on the 16th June, 1836. This first specimen had accidentally lost its tail, and from this Sir Thomas concluded that it was a peculiar characteristic; but all subsequent examples had the caudal appendage, which, in shape and the distribution of hair resembles the tail of *Peragalea lagotis*. The fur in both species is very soft, whilst all the true Bandicoots have very harsh fur.

GENUS PERAMELES.

Feet, tail, and ears rather short; the hind foot with a rudimentary inner toe or thumb. Fur composed of hairs of two kinds; the one forming a soft under-fur, the other hairs coarse, flattened, and longitudinally grooved; tail short, clothed with small adpressed hairs only. Five species are on record, of which three are found in New South Wales.

SHORT-EARED PERAMELES OR BANDICOOT (*Perameles obesula*).

Head moderately long; fur very harsh to the touch, yellowish-brown, mottled with black above, sandy below; feet pale-yellowish, short, and rather thick; the ears are very short, and the skull, as in all other *Peramelidae*, is thin and delicate; the teeth, even in young animals, appear always much worn, and the true form of the grinders can only be determined upon the examination of immature subjects. The dentition approaches to that of the *Dasyuridae* in the form and position of the molars, but their worn surfaces always enable the student to distinguish them from the sharp grinders of the "Native Cats."

The present species has a very wide distribution, and is found in almost every part of Australia, and in Tasmania. In the neighbourhood of Sydney, however, the animal has never been observed. The short-eared Bandicoot, when kept about a house, will soon destroy all the mice, though he does not eat many of them, and prefers roots, grubs, and insects, to a flesh diet. It has been noticed that when one of these animals was put into a large case with a number of mice, he would quickly destroy them in the following manner:—The victims were tumbled about with his fore-feet, and their limbs broken; when the whole were disabled the Bandicoot began to devour a portion of each—generally the brain only.

LONG-NOSED BANDICOOT (*Perameles nasuta*).

Muzzle very elongate; ears of moderate size; general colour greyish-brown, beneath white, or yellowish-white.

Habitat—New South Wales, more particularly the Coast district. The present species is excellent eating, and the largest of the tribe.

GUNN'S BANDICOOT (*Perameles gunnii*).

Upper parts of body grey, pencilled with yellow and black; under parts white; hinder parts of back blackish, with lighter bands; feet and tail white. This appears to be the next largest species; it is closely allied to the other striped Bandicoots of the mainland, and inhabits Tasmania exclusively.

STRIPED BANDICOOT (*Perameles fasciata*).

Fur rather long, and harsh to the touch; the hair composing it is grey at the root, pencilled with yellow, and tipped with black; upon the back it is darker than on the sides; three black stripes cover the loin. The present species, the smallest of the tribe, inhabits the interior of New South Wales, Northern Victoria, and South Australia. The West Australian Saddle-backed Bandicoot (*Perameles myosurus*) is probably a local variety, in which the markings are less distinct. The weight of the smallest species does not exceed 2 lbs.